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EXAMINER

ZHANG, SHIRLEY X

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/787,145
Filing Date: February 27, 2004
Appellant(s): PREGUICA ET AL.

Kelly G. Hyndman
(Reg. No. 39,234)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 9, 2009 appealing from the Office action mailed June 10, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

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(8) Evidence Relied Upon

Kavanagh	6,748,434	6-2004
Draves	"Default Address Selection for IPv6", IETF Draft	6-2002
Moore	"Re: getaddrinfo address ordering", an email posting to v6ops@ops.ietf.org	11-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 1 is rejected under 35 U.S.C. 112 second paragraph because there is insufficient antecedent basis for the limitation "the sender" recited in the claim.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over IETF Draft by Draves titled "Default Address Selection for IPv6" (hereinafter "**Draves**"), in view of U.S. Patent No. 6,748,434 to Kavanagh, and the email message posted by Keith Moore on the IETF IPv6 Operations (v6ops) Working Group's discussion board on November 18, 2002 (hereinafter "**Moore**").

DETAILED ACTION

This final office action is prepared in response to the amendments and arguments the applicant filed on February 26, 2008 in reply to the non-final office action mailed on November 26, 2007.

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Claims 1-4 have been amended;

Claims 1-4 are now pending.

Response to Arguments

Applicant's arguments and amendments filed on February 26, 2008 have been carefully considered but are not deemed fully persuasive.

Applicant's arguments are deemed moot in view of the following new grounds of rejection as explained here below, necessitated by Applicant's substantial amendments to the claims which significantly affect the scope thereof, and therefore require further search and consideration.

Accordingly, THIS ACTION IS MADE FINAL. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

1. **The objection to the abstract and the specification has been withdrawn** in view of the amended specification.
2. **Applicant's arguments regarding the amended claims have been considered but found unpersuasive.** As the amendments to the claims are substantial, the examiner has chosen to respond to applicant's arguments in the rejection of the individual claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claim 1 recites the limitation “means for returning to **the sender**”. There is insufficient antecedent basis for the limitation “the sender” in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over IETF Draft by Draves titled "Default Address Selection for IPv6" (hereinafter "**Draves**"), in view of U.S. Patent No. 6,748,434 to Kavanagh, and the email message posted by Keith Moore on the IETF IPv6 Operations (v6ops) Working Group's discussion board on November 18, 2002 (hereinafter "**Moore**"), and

Regarding claim 1 (currently amended), Draves discloses a method for destination address selection, where the selection is based on a set of rules which give the destination address that matches source address in the home address, label, native transport, and scope, etc. higher preference.

More specifically, Draves discloses means for receiving requests adapted to receive a request containing an IPv6 address of a first network element and a domain name; means for returning to the sender of the said request a response containing one or more addresses associated with a second network element corresponding the said domain name (Draves, page 3, paragraphs 1-2 disclose that as a DNS name resolution may yield both IPv6 and IPv4 address, algorithms for source address selection and destination address selection are proposed for choosing among both IPv6 and IPv4 addresses based on the type of address a requesting node is assigned; examples are given by Draves in the same paragraph where the node can be assigned a global IPv6 or link-local IPv6; The disclosure of DNS in the above cited paragraphs implies that that a host in the network must first sent a name resolution request to the DNS server. The steps of "receiving requests" and "returning a response" recited in the claim correspond to the standard

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DNS query and response process; In an IPv6 network, the DNS query inherently contains the IPv6 address of the requesting node, i.e., a first network element as recited in the claim); and

Draves further discloses the address sequencing means, for sequencing, as a function of said IPv6 address of the first network element, a plurality of IPv6 addresses associated with said second network element (Draves, Section 6 "Destination Address Selection", Rule 4, 5, and 7).

Draves does not expressly disclose that the address sequencing is performed on the DNS server and the DNS server then put one or more IPv6 addresses associated with said second network element in the order of the sequence in said response.

However, Kavanagh discloses a domain name server (DNS) that contains an adaptive node selector for selecting and returning a list of addresses for network nodes based on certain criteria, such as the vicinity of the requesting node and the requested node (Fig. 2, column 2, lines 1-27, column 7, lines 45-59 and column 9, lines 9-19).

It would have been obvious to combine Draves and Kavanagh so that Draves' destination selection algorithm is implemented in Kavanagh's adaptive node selector that is in the DNS server.

One would have been motivated to combine Draves and Kavanagh by Moore's email posting, which suggested that to solve the problem of address selection in an IPv6 transition network, one should stop relying so much on applications/hosts choosing destination addresses and instead have the network make a best effort choice of the addresses.

Regarding the motivation for combined suggested by Moore, the Applicant argues in the reply that Moore fails to direct the person skilled in the art to any specific network element. The examiner respectively disagrees because Moore's message is disclosed in the context of DNS

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query/response, as the subject line of the email thread "**Re: getaddrinfo address ordering**" has suggested. It is well known by one skilled in the art that getaddrinfo is a standard socket interface function for resolving domain names in operating systems such as UNIX, Linux and Windows. Therefore, Moore's email clearly directs to the DNS server. Furthermore, the email message prior to Moore's states that "**I believe what you need is some (dynamic) server selection method**" (see the copy of Moore's reference attached to the prior office action).

Therefore, Moore's disclosure is sufficient to motivate one skilled in the art to implement Draves' address selection algorithm in Kavanagh's dynamic domain name server.

Regarding claim 2 (currently amended), the combination of Draves and Kavanagh discloses the domain name server according to claim 1.

Draves further discloses that said address sequencing means is adapted to effect the sequencing as a function of the topology of the network, so that if the IPv6 address of the first network element is a local address belonging to an addressing space and the plurality of addresses associated with the second network element include at least one global IPv6 address and one local IPv6 address belonging to the same addressing space, the more local IPv6 address associated with the second network element corresponding to said addressing space is inserted at a first position within said response (Draves, page 12, section 6 "Destination Address Selection", "Rule 8: Prefer smaller scope", and the corresponding example in section 10.2 on page 15).

Regarding claim 3 (currently amended), the combination of Draves and Kavanagh discloses the domain name server according to claim 1.

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Draves further discloses that said address sequencing means is adapted to effect the sequencing so that if the IPv6 address of the first network element is a "6 to 4" type address beginning with the prefix "2002" and the plurality of addresses associated with the second network element include at least one "6 to 4" type address beginning with the prefix "2002", a "6 to 4" type address beginning with the prefix "2002" is inserted at a first position within said response (Draves, page 11, "Rule 5: Prefer matching label", and the corresponding example in section 10.2 on page 15).

Regarding claim 4 (currently amended), the combination of Draves and Kavanagh discloses the domain name server according to claim 1.

Draves further discloses sequencing the plurality of IPv6 address (Draves, section 6, "Destination Address Selection"), while Kavanagh discloses a DNS server with an adaptive node selector that filters and returns a list of addresses to the requesting node based on various criteria (Kavanagh, column 2, lines 20-28).

Therefore, the combination of Draves and Kavanagh would have created the domain name server according to claim 1, wherein the address sequencing means is adapted to put the sequenced plurality of IPv6 addresses associated with said second network element in said response.

One would have been motivated to combine Draves and Kavanagh by Moore's email posting, which suggested that to solve the problem of address selection in an IPv6 transition network, one should stop relying so much on applications/hosts choosing destination addresses

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and instead have the network make a best effort choice of the addresses, i.e., the address selection should be done by a network device such as the DNS server.

(10) Response to Arguments

A. Claim Rejections under 35 U.S.C. 112 2nd paragraph

Regarding the claim element “the sender”, **appellant argued that**

“although the sender does not have an explicitly antecedent basis, it does not render the claim to be indefinite because one of ordinary skill in the art could reasonably ascertain the scope regarding the sender, and the inherency of the sender.”

In response, Examiner submits that regardless of whether one of ordinary skill in the art could reasonably ascertain the scope of the claim element “the sender”, the said claim element clearly lacks explicit antecedent basis in the claim, making the claim noncompliant with 35 U.S.C. 112 2nd paragraph.

Therefore, the rejection is maintained.

B. Claim rejections under 35 U.S.C. 103(a) based on Draves in view of Kavanagh and Moore

1. Examiner’s summary of the claimed invention

What is claimed is a domain name server that resolves domain name queries sent by an IPv6 node by performing the following steps:

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(a) receiving a query from the IPv6 node requesting for the IP addresses of a second node whose domain name is included in the query; (b) retrieving a list of IP addresses associated with the domain name; (c) sequencing the list of IP addresses, and (d) returning the sequenced list to the requesting IPv6 node.

The sequencing is done based on criteria recited in the dependent claims 2, 3. In particular, the sequencing is a function of whether the IPv6 address of the requesting node is a local address or not.

2. Examiner's review of the references relied upon in the rejections

Draves disclosed a method for address sequencing and selection for IPv6 DNS queries when a network node is associated with multiple IP addresses, which scenario is typically seen in networks with private/public network, mobility architecture, multi-homing, or dual/hybrid stack.

Draves disclosed a method for an IPv6 node to (a) request a domain name server (via the `getaddrinfo()` function disclosed in Draves, page 4, line 5) for the IP addresses associated with a domain name, (b) receive a list of IP addresses from the domain name server, and then (c) sequence and select an IP address from the list.

The difference between Draves and the claimed invention is that Draves did not explicitly disclosed that the address sequencing can be done by a domain name server rather than the requesting IPv6 node.

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Kavanagh disclosed a domain name server (DNS) that can retrieve a list of IP addresses from its database, sort the list of IP addresses based on one or more of different criteria, and then returned the sorted list to the requesting client (Kavanagh, col. 1, lines 61-67; col. 2, lines 1-27; col. 4, lines 32-35).

Therefore, Kavanagh supplements Draves' disclosure by disclosing that a DNS server can be relied on for sequencing the IP addresses corresponding to a domain name and returning the sequenced list.

Moore is a posting on an Internet bulletin board that suggested letting the server serving the getaddrinfo() request decide which IPv4 or IPv6 address should be returned to the requesting client. Examiner relied on Moore to provide motivation to combine Draves and Kavanagh in an attempt to provide a stronger motivation for the combination. The use of Moore is not an admission by the Examiner that Draves or Kavanagh did not provide sufficient motivation for the combination. To the contrary, the motivation could have been readily found in either Draves or Kavanagh.

3. Examiner's response to Appellant's arguments regarding the rejections under 35 U.S.C. 103(a)

Appellant argued that

- a. Draves does not teach or suggest the "address sequencing means" recited in claim 1;

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b. Kavanagh does not make up for the deficiencies of Draves with respect to claim 1; and

In response, Examiner submits that Appellant's argument is deemed moot because Examiner did not rely solely on Draves to teach the “address sequencing means” recited in claim 1. Instead, Examiner relies on the combination of Draves and Kavanagh to teach the claim limitation, the complete text of which is recited below

“address sequencing means, for sequencing, as a function of said IPv6 address of the first network element, a plurality of IPv6 addresses associated with said second network element, and for putting one or more IPv6 addresses associated with said second network element in the order of the sequence in said response.”

As stated above in **"2. Examiner's review of the references relied upon in the rejections,"** the difference between Draves and the claimed invention is that Draves did not explicitly disclose that the domain name server can sequence the list of IP addresses and as a result return the list in the order of sequence in the response. Kavanagh supplements Draves' disclosure by disclosing that an adaptive DNS selection server can be used for sequencing the IP addresses corresponding to a domain name and returning the sequenced list.

Therefore, the combination of Draves and Kavanagh disclosed the “address sequencing means” recited in claim 1.

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Appellant further argued that

c. One of ordinary skill in the art would not have been motivated to combine Draves and Kavanagh

In response, Examiner submits that one of ordinary skill in the art would have been motivated to combine Draves and Kavanagh for reasons stated in the previous office action, which relies on Moore.

Furthermore, even without relying on Moore, one of ordinary skill in the art would still be motivated to combine Draves and Kavanagh because

(1) both Draves and Kavanagh disclosed using domain name server (DNS) to resolve a network node's queries for IP addresses (Draves, page 2, 8th line from the last, "DNS name resolution"; Kavanagh, col. 2, lines 2, "an adaptive domain name server (DNS)"); and

(2) both Draves and Kavanagh disclosed the scenario of having multiple IP addresses associated with a domain name (Draves, page 2, "1. Introduction", second paragraph; Kavanagh, col. 2, line 9, "key IP addresses", line 25, "a given fixed number of addresses to return").

Therefore, it would have been obvious for one of ordinary skill in the art to incorporate Kavanagh's teaching of an adaptive selection DNS server into Draves such that the address selection in Draves could be done using the adaptive selection DNS server because in Draves, it is the function `getaddrinfo()` that a network application on a node uses to resolve the IP addresses for a domain name. Whether the sequencing is done on the node or the server is transparent to the application, making the combination seamless to the network application.

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Regarding claims 2-4, Appellant argued that since the references fail to teach or suggest all the elements of claim 1, claims 2-4 are patentable by virtue of their dependency on claim 1.

In response, Examiner submits that the combination of references Draves and Kavanagh teaches all the elements of claim 1, rendering claim 1 obvious over the references (see Examiner's response to Appellant's arguments for claim 1 above for more information) and therefore unpatentable.

Further regarding claim 2, Appellant argued that "since Draves does not teach sequencing and putting addresses in a response from a DNS to a sender, the Rule 8 of the Destination Address Selection does not correspond to the recitation of claim 2."

In response, Examiner submits that it is the combination of Draves and Kavanagh that teaches sequencing by a DNS server and putting addresses in a response from the DNS server to a sender. After one of ordinary skill in the art incorporated Kavanagh's adaptive selection DNS server into Draves, having the DNS server utilize Draves' Rule 8 of the Destination Address Selection for IP address sequencing and selection would have become very obvious the person skilled in the art to do.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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/Shirley X Zhang/

Examiner, Art Unit 2444

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444

Conferees:

/William C. Vaughn, Jr./

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